Massey Ferguson®

1528
Standard Compact Tractor

WORKSHOP SERVICE MANUAL
4283040M1

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Part Number 4283040M1 (English)

Printed in U.S.A.
November 2006

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Standard Compact Tractor

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02 - General Information

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NOTES

GENERAL INFORMATION

TRACTOR TYPE AND OTHER IDENTIFICATION MARKINGS

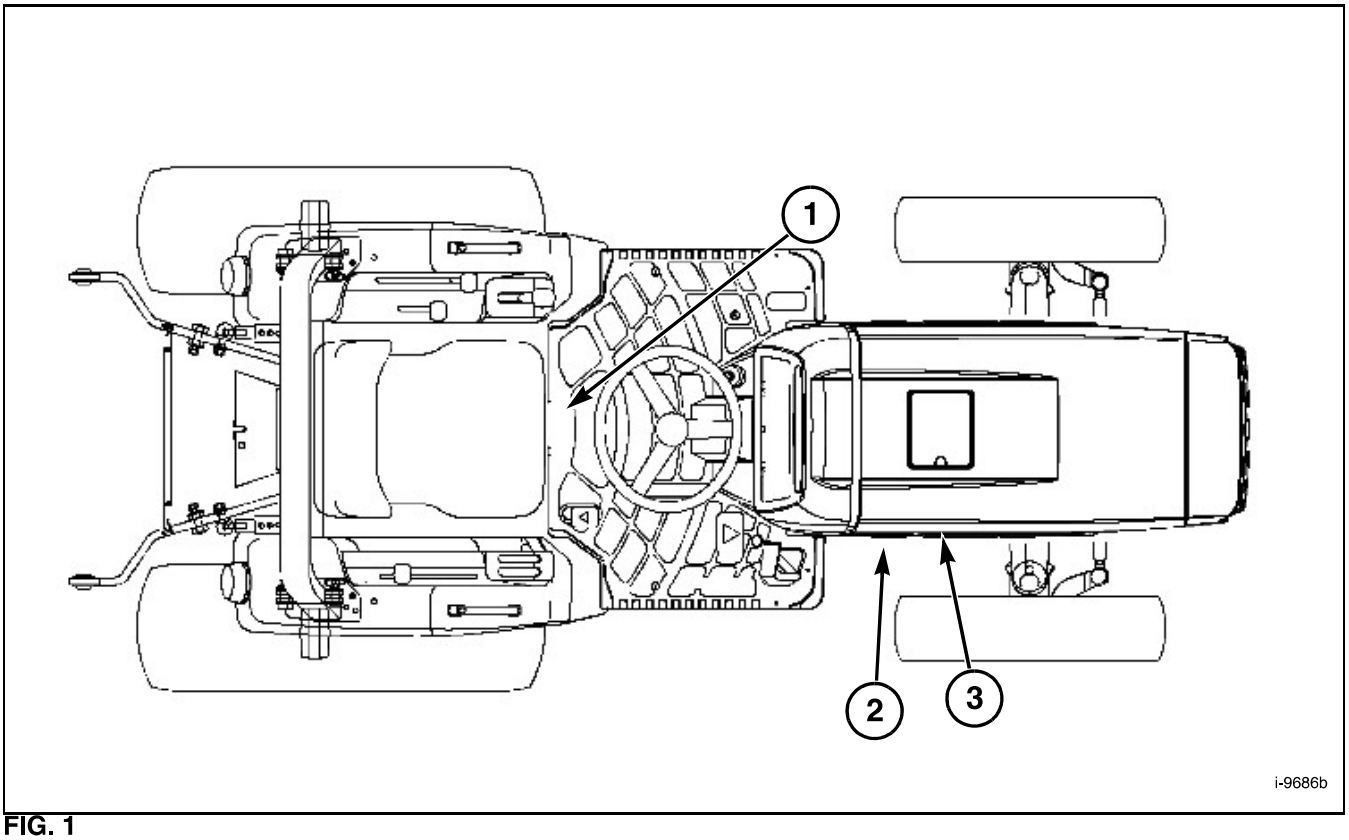

FIG. 1

FIG. 1: Identification markings:

(1) Tractor serial number

(2) Chassis serial number

(3) Engine information

TRACTOR, ENGINE MODEL, AND RESPECTIVE SERIAL NUMBERS

FIGS. 2–3–4: Each tractor is identified by means of the tractor model and serial numbers. As a further identification, the engine and chassis are also provided with identification numbers. They are provided as shown.

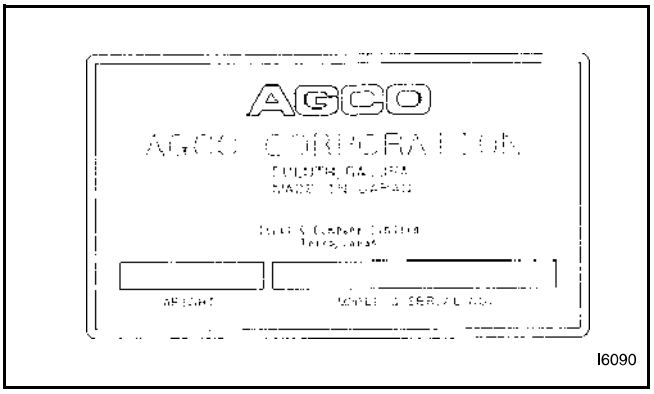

FIG. 2

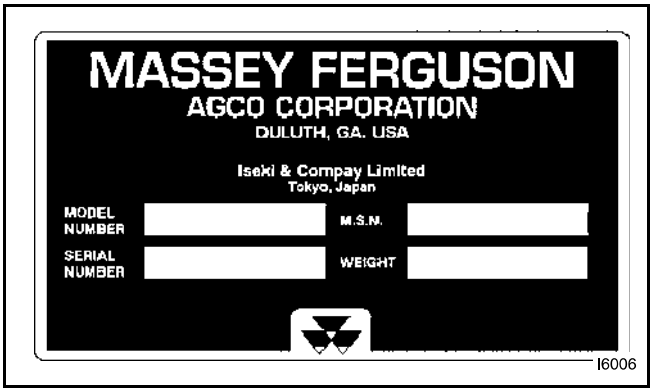

FIG. 3

FIG. 4

SPECIFICATIONS

These specifications are subject to change without notice.

Engine

Make.....ISEKI Diesel

Model E3CF-VB27

Type.....Indirect injection, overhead valve

Displacement ..... 1.463 lit. (89.3 cu in)

Number of cylinders..... 3

Bore .....86 mm (3.385”)

Stroke.....84 mm (3.307”)

Engine horsepower (net) @ engine revolution min (rpm) .....27.6 / 2500

PTO horsepower (estimate) .....24.2 @ 585 PTO rpm

Firing order.....1-3-2

Compression ratio.....21.7:1

Low idle speed..... 930 - 970 rpm

High idle speed .....2650 - 2750 rpm

Valve clearance (cold) - intake and exhaust .....0.35 mm (.014”)

Air cleaner..... Single stage - dry element

Engine cooling .....Liquid, forced circulation

Cold starting.....Glow plugs (3)

Transmission

Primary F3/R1

Range..... 3

Gear selections..... F9/R3

Clutch .....Dry dual disc (Dia: 215 mm) 8.46”

Brakes ..... Mechanically actuated, sealed wet disc

Speed range (Ag tires)

Forward

1..... 1.22 mph (1.96 kph)

2..... 1.79 mph (2.89 kph)

3..... 2.49 mph (4.00 kph)

4..... 3.05 mph (4.91 kph)

5..... 4.50 mph (7.23 kph)

6..... 6.23 mph (10.02 kph)

7..... 6.73 mph (10.83 kph)

8..... 9.91 mph (15.94 kph)

9..... 13.72 mph (22.08 kph)

Reverse

1..... 1.26 mph (2.02 kph)

2..... 3.15 mph (5.06 kph)

3..... 6.93 mph (11.16 kph)

Power Take-Off (PTO)

Control ..... Lever and pedal

Rear PTO shaft ..... 35 mm (1.375 in) diameter - six spline

Output ..... Clockwise rotation

Speeds @ engine rpm ..... 540 @ 2327

Mid PTO (accessory) shaft ..... 25 mm (1") diameter 15 spline

Output ..... Clockwise rotation

Speeds @ engine revolution min-1 (rpm) ..... 2000 @ 2500

Hydraulics

Main hydraulic system

Pump ..... Gear pump (Open center)

Output – maximum ..... 28 liters/min (7.4 gal/min)

Pressure - relief valve setting ..... 150 kgf/cm2 (2130 psi)

Rear linkage type ..... Three-point hitch

Control ..... Operated by single "position" control lever

Draft control (optional) ..... Top link sensing

Lift capacity ..... 1100 kg (2425 lb) measured at link ends

Steering system type ..... Hydrostatic

Pump ..... Gear/ Flow divider

Output - maximum ..... 9.8 liters/min (2.6 gal/min)

Pressure - relief valve setting ..... 120 kfg/cm2 (1711 psi)

Electrical System

System voltage ..... 12 volt - negative (-) ground

Battery cca @ - 18°C (0ºF) ..... 582 cca

Charging ..... 40 amp alternator with internal regulator

Capacities

Engine crankcase with filter ..... 3.6 liters (3.8 qts.)

Transmission and differential housing (including hydraulics) ..... 18 liters (4.8 qts.)

Fuel tank ..... 30 liters (7.9 gals.)

Cooling system ..... 5.5 liters (5.8 qts.)

Front axle - four-wheel drive ..... 4.5 liters (4.7 qts.)

GENERAL DIMENSIONS

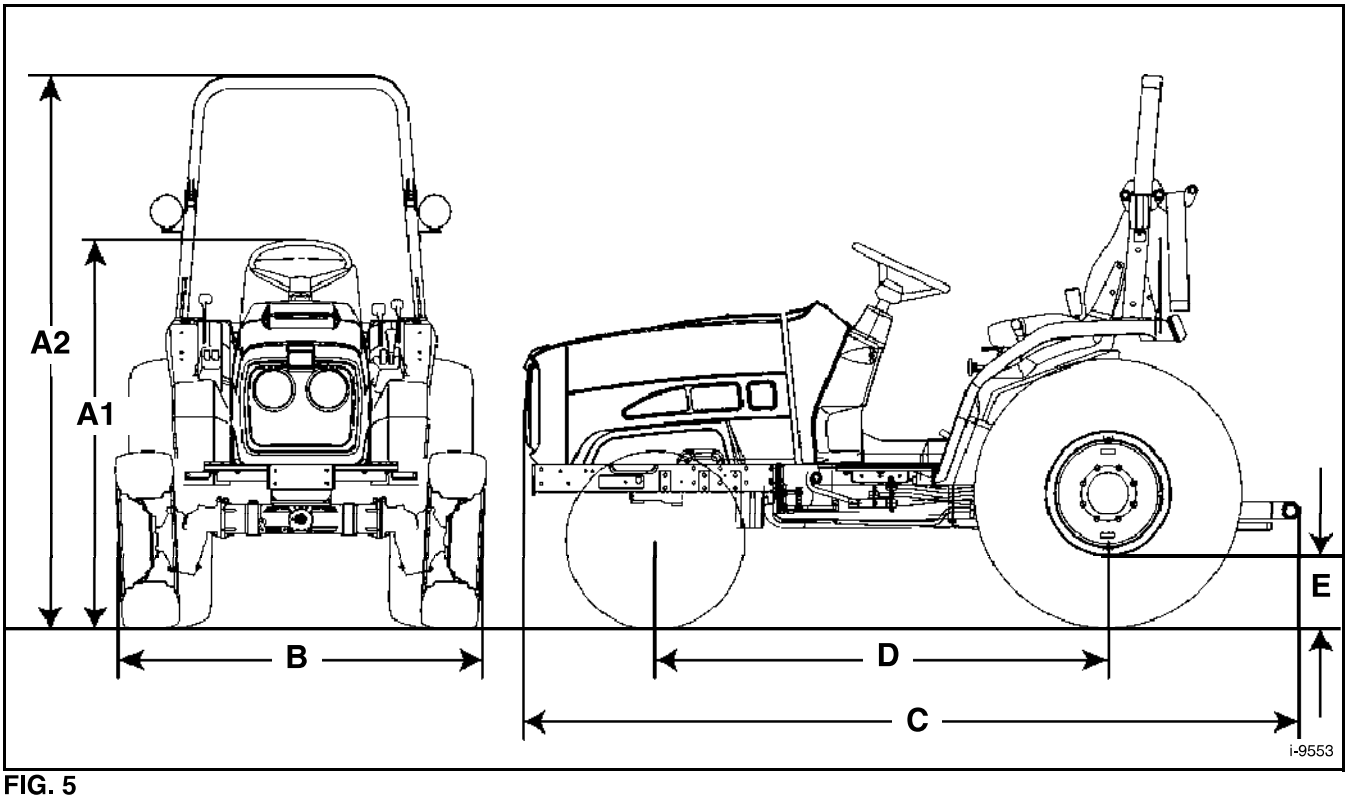

FIG. 5

General Dimensions 1528, ST28A, MT255B		AG	Turf	R-4
		Front - 25x8.50-14 Rear - 12.50/80-18	Front - 24x8.50-14 Rear - 36x13.50-15	Front - 25x8.50-14 Rear - 12.50/80-18
A1	Height to Steering Wheel	1400 mm (55.1 in)	1395 mm (54.9 in)	1400 mm (55.1 in)
A2	Overall Height to ROPS	2050 mm (80.7 in)	1995 mm (78.5 in)	2050 mm (80.7 in)
B	Overall Width	1360 mm (53.5 in) width of wheel	1360 mm (53.5 in) width of front wheel	1680 mm (66.1 in) width of wheel
C	Overall Length	2855 mm (112.4 in)	2855 mm (112.4 in)	2855 mm (112.4 in)
D	Wheelbase	1665 mm (65.6 in)	1665 mm (65.6 in)	1665 mm (65.6 in)
E	Minimum Ground Clearance	255 mm (10.0 in)	200 mm (7.9 in)	255 mm (10.0 in)
-	Turning Radius (w/o brake)	5600 mm (220.5 in)	5600 mm (220.5 in)	5600 mm (220.5 in)
-	Weight	1100 kg (2423 lb)	1040 kg (2291 lb)	1100 kg (2423 lb)

GENERAL PRECAUTIONS FOR SEPARATION AND REINSTALLATION

Before Operation

- Always be safety-conscious in selecting clothes to wear and suitable tools to use.
- Before disassembly, be sure that you familiarize yourself with the assembled condition for subsequent reference in reassembly.
- Keep parts and tools in proper order during operations.
- When servicing electrically live parts, be sure to disconnect the negative battery terminal.
- To prevent oil or water leaks, use the liquid gasket as required.
- When reassembling disassembled parts, discard used gaskets, O-rings, or oil seals and install new ones.
- When lifting up only the front or rear part of the tractor, be sure to wedge the grounded wheels.
- When the tractor is jacked up, be sure to support the entire tractor with something like a stand. Lifting it up with a jack only is a dangerously unstable procedure.
- When replacing parts, use authorized, genuine AGCO / Massey Ferguson / Challenger parts only. AGCO / Massey Ferguson / Challenger assumes no responsibility for accidents, operating problems or damage caused by the use of imitation parts. Also, the use of unauthorized parts will result in relatively poor machine performance.

Precautions To Be Followed When Installing Common Parts

Roller or ball bearings

- When a bearing is fitted in by the outer race, use an installer which is specially designed to push only the outer race and vice versa.
- The installer must be designed to install the bearing on the shaft in a parallel position.
- When installing a bearing which appears the same on both sides, install it so that the face which has the identification number faces in a direction for easy visual identification. All the bearings which are to be installed in the transmission case should be placed so that their identification number faces outward.
- If a shaft or a hole where a bearing is to be installed has a stopper, the bearing should be pushed in completely until it is seated against the stopper.
- Installed bearings should turn smoothly.

Oil seals

- Oil seal installer should be designed so as not to deform the oil seals.
- During installation, be careful not to damage the lips, and assure that it is pushed in parallel to the shaft or hole.
- When oil seals are installed, there should be no turnover of the lips nor dislocation of the springs.
- When a multi-lip seal is installed, the grooves between lips should be filled with grease, not adhesive.
- Use a lithium-based grease.
- There should be no oil or water leaks through the installed soil seals.

O-rings

- O-rings should be coated with grease before installing.
- Installed O-rings should have no slack or twist.
- Installed O-rings should maintain proper air tightness.

FIG. 6: Snap-rings

Snap-ring installers should be designed so as not to permanently deform the snap-rings.

Installed snap-rings should be seated securely in the groove.

Be careful not to overload the snap-ring to the extent that it is permanently deformed.

How to install the snap-ring:

When installing a snap-ring, install it as shown in the figure with its round edge side turned toward the part to be retained. This round edge is formed when the snap-ring is pressed out.

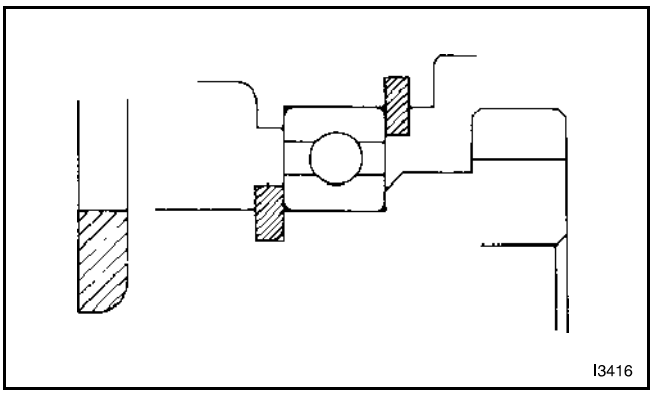

FIG. 6

FIG. 7: Spring (roll) pins

Spring pins should be driven in properly and tightly.

Spring pins should be installed so that their seams face the direction from which the load is applied.

The roll pins installed in the transmission or other parts where much force is applied should be retained with wire.

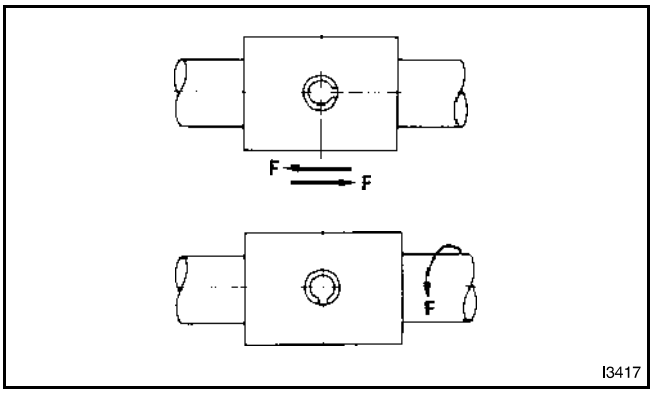

FIG. 7

FIG. 8: When installed, cotter pins should be bent securely at the ends as shown.

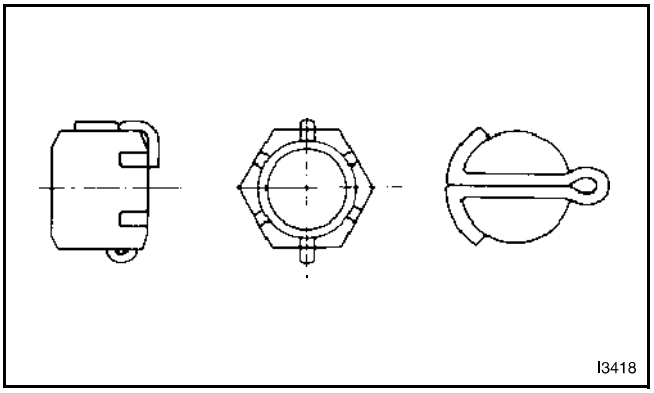

FIG. 8

Bolts and Nuts

- Special bolts are installed at several locations, so be sure not to interchange them with other bolts.
- Bolts and nuts should be tightened to their specified torque with a torque wrench.
- When locking the bolts or nuts with wire or a lock washer, be sure to wind the wire paying sufficient attention to its winding direction and bend the lock washer for secure locking.
- When locking bolts and nuts with an adhesive, apply the adhesive on the thread and tighten securely.
- Apply an adhesive (THREE BOND TB1104) to parts through which there is any possibility of oil leaks, such as stud bolts and tapped-through parts.
- Each lock nut must be tightened securely.
- When tightening bolts and nuts, refer to the tightening torque table.

After installation, each grease fitting should be filled with grease.

- When installing grease fittings of types B and C, be sure to turn the fitting tips in a direction that will provide easy access for a grease gun.

Other Precautions

- Be sure not to damage any finished surfaces or parts.
- Always refrain from forcing installation.
- Each lever knob should be installed coated with an adhesive (SUPER THREE CEMENT TB1702)
- Each contact surface should be coated with an adhesive (THREE BOND TB1215) and tightened evenly with bolts. Adhesive coated surfaces should be installed within 30 minutes after application of the adhesive.
- The contact surfaces should be flawless and free from foreign matter, and especially from grease before application of the adhesive.

  Contact surfaces of the sleeve metal (support) and front transmission case

  Contact surfaces of the hydraulic control lever guide and cylinder case
- Precautions for applying adhesives

  The surface or the thread where an adhesive is to be applied should be completely free of chips and oil.